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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/788,414

03/01/2004

Chad A. Mirkin

083847-0235

4969

22428 7590 02/07/2007  
FOLEY AND LARDNER LLP  
SUITE 500  
3000 K STREET NW  
WASHINGTON, DC 20007

EXAMINER

LUM, LEON YUN BON

ART UNIT

PAPER NUMBER

1641

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

02/07/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/788,414	<b>Applicant(s)</b> MIRKIN ET AL.	
	<b>Examiner</b> Leon Y. Lum	<b>Art Unit</b> 1641	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 09 November 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-140 is/are pending in the application.
- 4a) Of the above claim(s) See Continuation Sheet is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) See Continuation Sheet is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 3/1/04 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/14/05</u>  | 6) <input type="checkbox"/> Other: _____                          |

Continuation of Disposition of Claims: Claims withdrawn from consideration are 3,4,6,8-13,15,16,18,20,22,28-33,42,43,45,47-51,53,54,56,58,60,66-70,73-79,86,93,104 and 116.

Continuation of Disposition of Claims: Claims rejected are 1,2,5,7,14,17,19,21,23-27,34-41,44,46,52,55,57,59,61-65,71,72,80-85,87-92,94-103,105-115 and 117-140.

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicants' election with traverse of claims 1-2, 5, 7, 14, 17, 19, 21, 23-27, 34-36, 37-41, 44, 46, 52, 55, 57, 59, 61-65, 71-72, 80-85, 87-92, 94-103, 105-115, and 117-140 in the reply filed on November 9, 2006 is acknowledged. The traversal is on the ground(s) that all the claims can be effectively searched and examined without serious burden to the examiner. This is not found persuasive because Applicants have not specifically addressed the reasons established by the Examiner why a search encompassing all claims would be a serious burden. Applicants simply state that there would not be a serious burden, which is not convincing enough to overcome the reasons given by the Examiner.

The requirement is still deemed proper and is therefore made FINAL.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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3. Claims 1-2, 5, 7, 14, 17, 19, 21, 23-27, 34-35, 37-38, 40-41, 44, 46, 52, 55, 57, 59, 61-65, 71-72, 80-81, 84, 87, 90, 91-92, 94-96, 98-102, 110-115, 117-130, 134-135, and 137-140 are rejected under 35 U.S.C. 102(b) as being anticipated by Mirkin et al (WO 00/41213) (hereinafter "Mirkin").

Mirkin teaches the method of dip-pen nanolithography (i.e. direct-write lithography) by coating a scanning probe microscope tip with a patterning compound (i.e. providing a tip with a selected protein patterning compound; scanning probe microscope tip), wherein the compound can be a peptide or protein, and then bringing the coated tip into contact with a substrate to write a pattern (i.e. providing a substrate surface; depositing the selected protein patterning compound from the tip to the substrate surface to produce a pattern). See page 9, lines 1-2, 18-25, and 28-31; page 13, lines 1-4; and page 14, lines 19-31. Mirkin also teaches modifying tips with a hydrophobic compounds including 1-dodecylamine (i.e. selected chemical agent to improve deposition of the selected protein patterning compound; improves reproducibility ; improves protein deposition). See page 19, lines 1-24. Mirkin also teaches that the hydrophobic compounds can be the same compounds used for patterning substrates, including polyethylene glycol (i.e. inhibit protein adsorption; polyalkylene glycol compounds). See page 8, lines 28-29; page 9, lines 22-28; and page 19, lines 4-9.

Regarding claims 17 and 55, Mirkin teaches an Au(111)/mica substrate. See page 4, line 4.

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Regarding claims 19, 57, Mirkin teaches that stable surface structures are formed by chemisorption of the molecules of the patterning compound. See page 8, lines 23-25.

Regarding claims 21, 23-25, 38, 59, 61-63, 92, 94-96, 98-99, 112, 115, 118, 124-125, and 130, Mirkin teaches an array of 0.46  $\mu\text{m}$  diameter dots, each dot being separated by 0.54  $\mu\text{m}$ . See page 21, lines 20-26.

Regarding claims 26-27, 64-65, 72, 119, 129, and 134, Mirkin teaches the step of printing a monolayer (i.e. pattern is a dot or line one protein molecule wide and high), wherein the monolayer can be peptides or proteins (height of about 8 nm to about 10 nm). See page 9, lines 19-20 and page 32, line 3.

Regarding claims 34, 71, 128, 135, and 137-138, Mirkin teaches two or more patterns and two or more pattern compounds applied in a single substrate (i.e. at least two different types of proteins; bio-recognition properties only in the protein dots), wherein the pattern compounds can include a nucleic acid (i.e. non-peptide). See page 15, lines 7-10.

Regarding claim 90, 100, Mirkin teaches silicon nitride tips coated with titanium. See page 22, lines 1-3.

Regarding claims 91 and 98, Mirkin teaches that physisorption of aqueous solutions of patterning compounds can also be enhanced by increasing the hydrophilicity of the tips. See page 7, lines 16-19.

Regarding claims 101-102, Mirkin teaches that the substrate can be any material, including metals such as gold. See page 7, line 26 to page 8, line 20.

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Regarding claims 113-114, 120-122, 126-127, and 131-132, Mirkin teaches a separation distance of 70 nm. See page 6, lines 6-7.

Regarding claim 123, Mirkin teaches printing an array of 25 dots in 20 seconds. See page 21, lines 20-23.

Regarding claims 131-132, Mirkin teaches dot diameters of 15 nm. See page 5, lines 25-26.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

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the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 36, 39, 82-83, 85, and 88-89 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mirkin et al (WO 00/41213) (hereinafter "Mirkin").

The teachings of Mirkin have been disclosed above and Mirkin also teaches that that relative humidity affects the resolution of the lithographic process. See page 17, lines 13-18. However, Mirkin fails to teach that the relative humidity during deposition is about 55% to about 85%.

It has long been settled to be no more than routine experimentation for one of ordinary skill in the art to discover an optimum value for a result effective variable.

Section 2144.05 [R3] of the MPEP presents case law upholding obviousness rejections based on optimization of ranges:

A. Optimization Within Prior Art Conditions or Through Routine Experimentation

Generally, differences in concentration or temperature will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration or temperature is critical. "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955) (Claimed process which was performed at a temperature between 40°C and 80°C and an acid concentration between 25% and 70% was held to be prima facie obvious over a reference process which differed from the claims only in



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that the reference process was performed at a temperature of 100°C and an acid concentration of 10%.); see also Peterson, 315 F.3d at 1330, 65 USPQ2d at 1382 ("The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages."); In re Hoeschele, 406 F.2d 1403, 160 USPQ 809 (CCPA 1969) (Claimed elastomeric polyurethanes which fell within the broad scope of the references were held to be unpatentable thereover because, among other reasons, there was no evidence of the criticality of the claimed ranges of molecular weight or molar proportions.)

The specification discloses the appropriate ranges that apply to the claimed invention on page 25, last paragraph, by stating "The transport of the protein structures described herein were not, in general, highly humidity dependent over a range of about 55% to about 85% relative humidity at ambient." However, the specification does not disclose that the specifically claimed range of 55% to about 85% is for any particular purpose or to solve any stated problem that distinguishes it from the other ranges disclosed. The specification therefore lacks disclosure of the criticality required by the Courts in providing patentability to the claimed range. In fact, the specification discloses that "[o]ne skilled in the art can vary the humidity and temperature to determine the effect on the resolution and quality of the lithography" (page 18, 2<sup>nd</sup> full paragraph), thereby admitting that while different humidity ranges may have different effects, one skill in the art would be able to determine the optimal range without undue experimentation.

In addition to a lack of disclosed criticality in the specification, an obviousness rejection based upon optimization must rely on prior art that discloses the optimized parameter is a result-effective variable. See MPEP 2144.05:

**B. Only Result-Effective Variables Can Be Optimized**

A particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation. In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977) (The claimed wastewater treatment device had a tank volume to contractor area of 0.12 gal./sq. ft. The prior art did not recognize that treatment capacity is a function of the tank volume to contractor ratio, and therefore the parameter optimized was not recognized in the art to be a result-effective variable.). See also In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980) (prior art suggested proportional balancing to achieve desired results in the formation of an alloy).

Since Mirkin teaches that the relative humidity affects the resolution of the lithographic process, the prior art therefore provides teaching that the claimed "relative humidity" is a variable that achieves a recognized result, and satisfies the above requirement of a result-effective variable in order to set forth an obviousness rejection based on optimization.

Because Applicants fail to disclose that the claimed range of about 55% to about 85% provides a criticality to the invention that separates it from the other ranges in the specification, and the prior art discloses that relative humidity will affect the resolution of lithographic printing absent unexpected results, it would therefore have been obvious for one of ordinary skill to discover the optimum workable range of about 55% to about 85% by normal optimization procedures known in the nanolithography arts.

8. Claims 97 and 103 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mirkin et al (WO 00/41213) (hereinafter "Mirkin") in view of Duffy (Us 2002/0028463 A1).

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The teachings of Mirkin have been disclosed above and Mirkin additionally teaches AFM detection of immobilized substances. See page 3, line 29 to page 4, line 2 and Figure 2A. However, Mirkin fails to teach that the protein is labeled with a fluorophore to analyze the pattern.

Duffy teaches that biomolecules immobilized on an array can be detected by detection techniques known in the art, including fluorescence detection and scanning probe microscopes such as AFM. See pages 12-13, paragraph 0113.

The courts have ruled that art-recognized equivalence between embodiments provides a strong case of obviousness in substituting one material for another. See MPEP 2144.06:

In order to rely on equivalence as a rationale supporting an obviousness rejection, the equivalency must be recognized in the prior art, and cannot be based on applicant's disclosure or the mere fact that the components at issue are functional or mechanical equivalents. In re Ruff, 256 F.2d 590, 118 USPQ 340 (CCPA 1958) (The mere fact that components are claimed as members of a Markush group cannot be relied upon to establish the equivalency of these components. However, an applicant's expressed recognition of an art-recognized or obvious equivalent may be used to refute an argument that such equivalency does not exist.); Smith v. Hayashi, 209 USPQ 754 (Bd. of Pat. Inter. 1980) (The mere fact that phthalocyanine and selenium function as equivalent photoconductors in the claimed environment was not sufficient to establish that one would have been obvious over the other. However, there was evidence that both phthalocyanine and selenium were known photoconductors in the art of electrophotography. "This, in our view, presents strong evidence of obviousness in substituting one for the other in an electrophotographic environment as a photoconductor." 209 USPQ at 759.).

Because Duffy teaches that fluorescence detection, which necessarily requires a fluorophore label, and scanning probe detection are recognized as equivalents applied for the same purpose, and Applicants have not provided evidence indicating why these two techniques cannot be considered art-recognized equivalents, it would have been

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obvious to one of ordinary skill in the art at the time of the invention to substitute the fluorescence detection, as taught by Duffy, for the AFM detection of Mirkin. In addition, one of ordinary skill in the art at the time of the invention would have had a reasonable expectation of success in substituting the fluorescence detection into the method Mirkin, since Mirkin teaches the attachment of biomolecules onto a surface, and the fluorescence detection of Duffy is capable of detecting biomolecules attached to a surface.

9. Claims 105 and 107-108 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mirkin et al (WO 00/41213) (hereinafter "Mirkin") in view of Majumdar et al (US 2002/0102743 A1) (hereinafter "Majumdar").

The teachings of Mirkin have been disclosed above, but they fail to teach that the back side of the cantilever is treated so that the back side is passivated against protein or peptide adhesion.

Majumdar teaches the attachment of a mixed alkanethiol monolayer, in order to maintain a hydrophilic interface for the biomolecule of interest, but passivates the high energy gold surface from nonspecific adsorption. See page 3, paragraph 0040.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Mirkin with the attachment of a mixed alkanethiol monolayer to the microcantilever surface, as taught by Majumdar, in order to maintain a hydrophilic interface for the biomolecule of interest, but passivates the high energy gold surface from nonspecific adsorption. The benefit of preventing nonspecific adsorption

to the microcantilever surface provides the motivation to combine the alkanethiol monolayer of Majumdar with the method of Mirkin. In addition, one of ordinary skill in the art at the time of the invention would have had a reasonable expectation of success in including the alkanethiol monolayer of Majumdar with the method of Mirkin, because the monolayer of Majumdar is placed on a microcantilever and Mirkin also teaches a microcantilever.

10. Claims 106 and 136 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mirkin et al (WO 00/41213) (hereinafter "Mirkin") in view of Everhart et al (US 2001/0004526 A1) (hereinafter "Everhart").

The teachings of Mirkin have been disclosed above, and Mirkin also teaches that the substrate can be any material, including metals such as gold. See page 7, line 26 to page 8, line 20. However, Mirkin fails to teach that the treatment is with a sulfur-containing compound.

Everhart teaches the step of placing a sulfur derivative as a blocker onto a substrate, in order to prevent non-specific binding on the substrate. See page 4, paragraph 0037.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Mirkin with the step of placing a sulfur derivative as a blocker onto a substrate, as taught by Everhart, in order to prevent non-specific binding on the substrate. The benefit of preventing unwanted biological materials onto a substrate provides the motivation to combine the teachings of Everhart with the

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teachings of Mirkin. In addition, one of ordinary skill in the art at the time of the invention would have had a reasonable expectation of success in including the blocking step of Everhart in the method of Mirkin, since Mirkin teaches gold substrates and Everhart teaches that the blocking layer can be applied to gold substrates. See page 2, paragraph 0017.

11. Claim 109 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mirkin et al (WO 00/41213) (hereinafter "Mirkin") in view of Majumdar et al (US 2002/0102743 A1) (hereinafter "Majumdar").

The teachings of Mirkin have been disclosed above and Mirkin also teaches that that relative humidity affects the resolution of the lithographic process. See page 17, lines 13-18. However, Mirkin fails to teach that the relative humidity during deposition is at least 55%.

It has long been settled to be no more than routine experimentation for one of ordinary skill in the art to discover an optimum value for a result effective variable. Section 2144.05 [R3] of the MPEP presents case law upholding obviousness rejections based on optimization of ranges:

A. Optimization Within Prior Art Conditions or Through Routine Experimentation

Generally, differences in concentration or temperature will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration or temperature is critical. "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955) (Claimed process which was performed at a temperature between 40°C and 80°C and an acid concentration between 25% and 70% was held to be prima facie obvious over a reference process which differed from the claims only in

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that the reference process was performed at a temperature of 100°C and an acid concentration of 10%.); see also Peterson, 315 F.3d at 1330, 65 USPQ2d at 1382 ("The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages."); In re Hoeschele, 406 F.2d 1403, 160 USPQ 809 (CCPA 1969) (Claimed elastomeric polyurethanes which fell within the broad scope of the references were held to be unpatentable thereover because, among other reasons, there was no evidence of the criticality of the claimed ranges of molecular weight or molar proportions.)

The specification discloses the appropriate ranges that apply to the claimed invention on page 25, last paragraph, by stating "The transport of the protein structures described herein were not, in general, highly humidity dependent over a range of about 55% to about 85% relative humidity at ambient." However, the specification does not disclose that the specifically claimed range of at least 55% is for any particular purpose or to solve any stated problem that distinguishes it from the other ranges disclosed. The specification therefore lacks disclosure of the criticality required by the Courts in providing patentability to the claimed range. In fact, the specification discloses that "[o]ne skilled in the art can vary the humidity and temperature to determine the effect on the resolution and quality of the lithography" (page 18, 2<sup>nd</sup> full paragraph), thereby admitting that while different humidity ranges may have different effects, one skill in the art would be able to determine the optimal range without undue experimentation.

In addition to a lack of disclosed criticality in the specification, an obviousness rejection based upon optimization must rely on prior art that discloses the optimized parameter is a result-effective variable. See MPEP 2144.05:

**B. Only Result-Effective Variables Can Be Optimized**

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A particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation. In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977) (The claimed wastewater treatment device had a tank volume to contractor area of 0.12 gal./sq. ft. The prior art did not recognize that treatment capacity is a function of the tank volume to contractor ratio, and therefore the parameter optimized was not recognized in the art to be a result-effective variable.). See also In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980) (prior art suggested proportional balancing to achieve desired results in the formation of an alloy).

Since Mirkin teaches that the relative humidity affects the resolution of the lithographic process, the prior art therefore provides teaching that the claimed "relative humidity" is a variable that achieves a recognized result, and satisfies the above requirement of a result-effective variable in order to set forth an obviousness rejection based on optimization.

Because Applicants fail to disclose that the claimed range of about 55% to about 85% provides a criticality to the invention that separates it from the other ranges in the specification, and the prior art discloses that relative humidity will affect the resolution of lithographic printing absent unexpected results, it would therefore have been obvious for one of ordinary skill to discover the optimum workable range of at least 55% by normal optimization procedures known in the nanolithography arts.

12. Claim 133 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mirkin et al (WO 00/41213) (hereinafter "Mirkin").

The teachings of Mirkin have been disclosed above, but they fail to teach that the plurality of dots is at least 85 dots.



However, it would have been an obvious matter of design choice to deposit at least 85 dots, since such a modification would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art. *In re Rose*, 105 USPQ 237 (CCPA 1955). In this case, Mirkin teaches a plurality of different array sizes, as disclosed above. Therefore, it would be within the level of ordinary skill in the art to alter the physical size of the array because the method of producing different-sized arrays requires no difference in the specific deposition techniques of dip-pen nanolithography.

### ***Double Patenting***

13. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in

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scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

14. Claims 1-2, 5, 7, 14, 17, 19, 21, 23-27, 34-36, 37-41, 44, 46, 52, 55, 57, 59, 61-65, 71-72, 80-85, 87-92, 94-103, 105-115, and 117-140 are provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 1-140 of copending Application No. 10/442,189. This is a provisional double patenting rejection since the conflicting claims have not in fact been patented.

### ***Conclusion***

15. No claims are allowed.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leon Y. Lum whose telephone number is (571) 272-2878. The examiner can normally be reached on weekdays from 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Le can be reached on (571) 272-0823. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Leon Y. Lum  
Patent Examiner  
Art Unit 1641



LONG V. LE 01/22/07  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1600